



USER'S MANUAL

SPD-3.3 COMBINED HEAT SMOKE DETECTOR

The detectors comply with EN 54-5:2003, EN 54-7:2004.

The following abbreviations apply in the manual.

AL – alarm loop;

FACP – control panel.

1 PURPOSE

1.1 The SPD-3.3 combined heat smoke detectors feature:

- fixed temperature detection, A2 class,
- effective detection of smoke,
- LED indication of standby mode and alarm condition,
- 4-wire connection to 12 V FACP or fire intruder CP,
- indoor use.

1.2 When exceeding the threshold ambient temperature value the detector shall issue the alarm signal for FACP.

1.3 The Fire mode is indicated with the red LED indicator (steadily lit – DC AL, flashing – AC AL).

1.4 The red LED flashes every 1-2 sec in standby mode.

2 TECHNICAL SPECIFICATIONS

2.1 Static response temperature range, °C.....	54 – 70
2.2 Smoke sensor response time, sec.....	10
2.3 Supply voltage range, V	12±3,0
2.4 Standby current consumption, mA.....	≤0,095
2.5 Alarm current consumption, mA.....	≤22
2.6 Output relay contact commutation voltage, V.....	<36
2.7 Output relay contact commutation current, mA.....	<50
2.8 Output relay contact resistance in standby mode, Ohm.....	<5
2.9 N.O. relay contact resistance, kOhm.....	>500
2.10 Resistance of N.O. contacts “3”-“6” of B103-02 base when the detector is detached from the base, kOhm.....	>200
2.11 Resistance of N.C. contacts “3”-“6” of B103-02 base when the detector is attached to the base, Ohm.....	< 5
2.12 Dimensions, mm.....	Ø100 × 48
2.13 Weight, g.....	150
2.14 Average lifespan, years.....	≥10
2.15 Operating temperature range, °C.....	from -10 to 55

3 ITEMS SUPPLIED WITH THE DETECTOR

<i>Name</i>	<i>Quantity</i>	<i>Note</i>
SPD-3.3 combined heat smoke detector	Up to 25 pcs	B103-03 base included
Manual	1 pc.	Per a package
Package	1 pc.	Per 25 pcs

K-4 mounting rings for installation to suspended ceilings if ordered separately.

UK-4 EOL devices can be supplied if indicated in a purchase order. The UK-4 should be installed at the end of AL and the device indicates the presence of supply voltage of detectors and is meant for EOL resistor installation. Fault notification shall be issued in such AL during power outages or when the detector is detached from the base.

N.O. detectors can be supplied by a special order.

4. DESIGN AND PRINCIPLES OF OPERATION

4.1 The principle of the detector's operation is based on the control of optical medium density and ambient temperature.

4.2 The detector consists of the detector itself and the base. The optical system, the signal processing electronic unit and LED control circuit are placed in the plastic housing of the detector and two sensors – heat sensor for temperature control and the optical system for optical density control. The detector is connected to the base with a 4-contact joint.

4.3 When there is no smoke in the sensitive zone of the optical system and ambient temperature is below the threshold, and the detector connected to the control panel will be in standby mode, the red LED periodical flashing indicates about.

4.4 When smoke appears in the sensitive zone of the optical system or ambient temperature exceeds the threshold, the electronic circuit issues the alarm signal by intermittent change of internal resistance that leads to current growth in alarm loop. The red LED is switched on in alarm mode and is steadily lit (DC AL). If the detector is connected to AC AL, the red LED in Fire mode flashes with the frequency determined by FACP.

4.5 The reset of detectors to the standby mode occurs when the mains supply switches off for not less than 3 s with the following energizing.

4.6. Contacts “6” and “3” sited on the base comprise N.O. contact. The Fault signal shall be issued when the detector is detached from the base.

5. PLACEMENT AND INSTALLATION

5.1 You should site detectors in places with the following conditions:

- minimal vibrations of constructions;
- minimal illumination intensity;
- maximum distance from sources of electrical-magnetic interferences (electric wiring etc.), infra-red radiation (heat devices);
- elimination of water ingress on the case and penetration out of the base;
- no gas, steam, aerosol emission that can cause corrosion.

5.2 Detectors are connected to the loop with bases. The bases should be secured onto the detectors' site of mounting using two Ø6x25 mm expansion bolts and two Ø3x30 mm self-tapping screws. The center-to-center distance between mounting holes of the base is $70 \pm 0,2$ mm. The view of the base appears in Figure 1.

5.3 You can connect up to three $0,5 \text{ mm}^2$ wires to one screw joint of the base.

5.4 You should provide protection against construction debris, paint and dusts when repairing lodgings.

5.5 The wiring diagram for detectors to control panel is shown in Figure 2.

6. PREPARATION FOR OPERATING AND SEQUENCE OF OPERATIONS

6.1 Open the package after receiving detectors, check contents.

ATTENTION! If detectors were in below 0° C temperature conditions before opening the package, allow them to acclimatize inside the structure for at least 4 hours.

6.2 Test detectors for proper operating.

6.2.1 Connect the detector to a DC power source of $12 \pm 1,8$ V and ≥ 50 mA load current (“plus” connect to the contact “2”, “minus” – to the contact “3”).

6.2.2 Switch on the mains supply and in not less than 10 s introduce into the test hole on the detector’s cover (plastic or metal pin Ø0,9 mm, 4-5 mm long) and simultaneously switch the stopwatch on.

6.2.3. When the red LED gets lit, stop the stopwatch and determine the response time (lag) that should be ≤ 10 s.

6.3 The reset to standby mode should be made by turning off the mains supply for at least 3 s.

7. MAINTANCE

7.1 Vacuum at least every six months to keep unit working efficiently by firstly turning off the mains supply and vacuuming through the vents during one minute using a soft brush attachment or using another 0,5-3 kg/cm² compressor.

7.2 Then test detectors for proper operating. If the detector is detached from the base then the test should be made according to p.6.2.

7.3 The test of the smoke sensor should be made by inserting a tester into the hole on the detector’s cover, and heat sensor – with air flow directed to the thermal element with temperature by 5°C higher than maximum threshold response temperature. The red LED will be lit if the detector operates properly, and the control panel will issue the alarm signal.

8. GUARANTEE

8.1 The detector is warranted by the manufacturer for 18 months upon the date of the detector’s commissioning but not more than for 30 months from the date of approval by the manufacturer’s quality control department.

8.2 The manufacturer shall repair or replace detectors within the guarantee term provided that the rules of installation, timely maintenance, transportation and storage of detectors have been kept.

8.3 In the case faults according to a reclamation have been removed the guarantee term is prolonged for the while detectors were not in use because of faults.

Figure 1

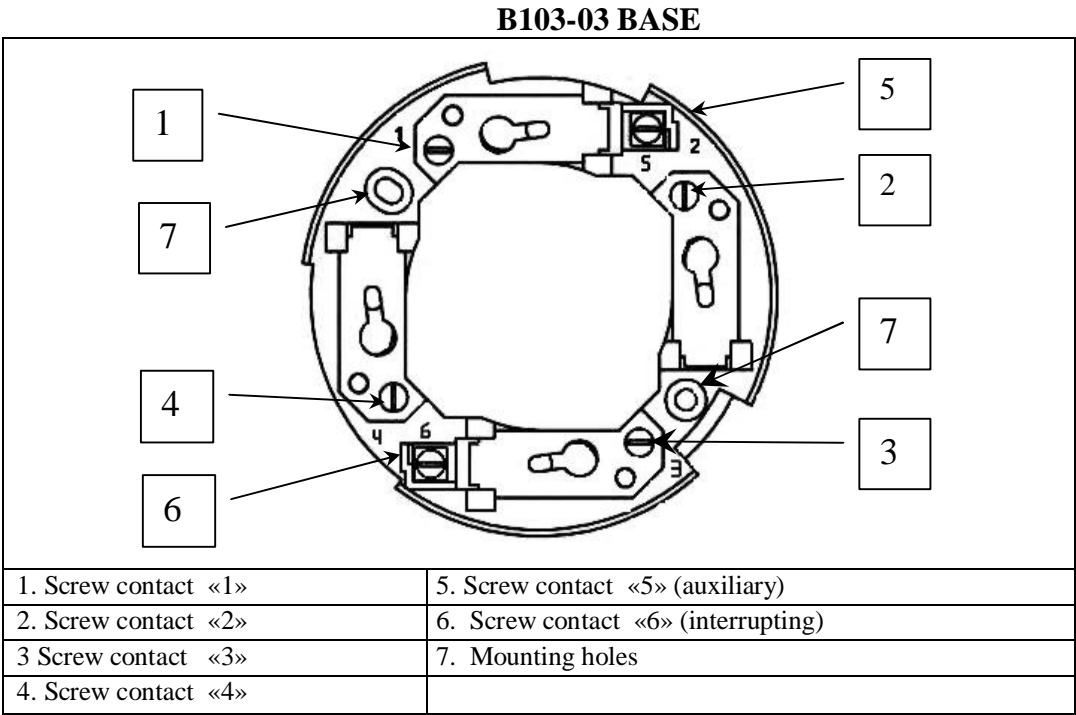
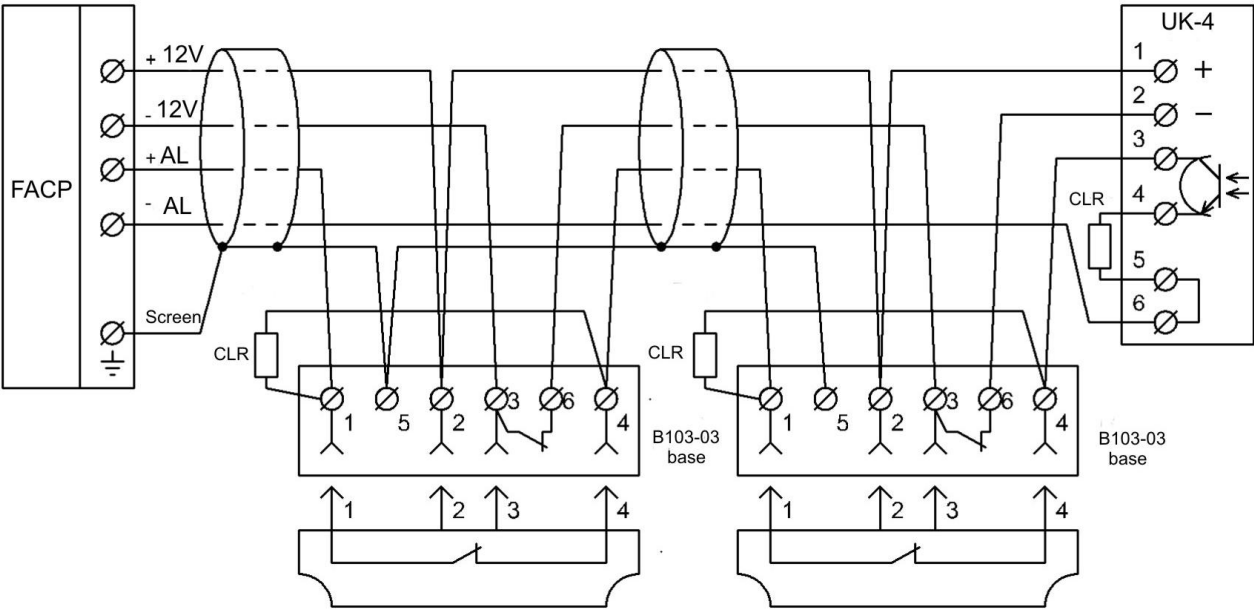


Figure 2

WIRING DIAGRAM FOR SPD-3.3 DETECTORS TO CONTROL PANEL



EOL resistor and CLR are specified by control panel specifications

Output relay contacts state of the UK-4 EOL device are shown at 12 V supply voltage. Base’s contacts “6” and “3” comprise an interrupting contact. When the detector is detached from the base the FAULT signal is issued (AL break).